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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/825,426	04/03/2001	Glenn Frank	20062/3-CIP	2062

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EXAMINER	
OYEBISI, OJO O	

ART UNIT	PAPER NUMBER
3692	

MAIL DATE	DELIVERY MODE
05/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/825,426	FRANK ET AL.	
	Examiner	Art Unit	
	OJO O. OYEBISI	3692	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

In the amendment filed on 01/04/2007, the following have occurred: claims 1, 7, 9 and 10 have been amended. The amendment has necessitated the withdrawal of the rejections under 35 U.S.C. 112, second paragraph.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al (Jones hereinafter, US PAT: 6,021,397) in view of Kassicieh (Kass hereinafter, "Investment Decisions Using Genetic Algorithms" in the proceedings of the Thirtieth Hawaii International Conferences on System Sciences" in Jan 1997.), and further in view of Shoaf ("The Efficient Set GA for Stock Portfolios" in the IEEE World Conferences on Computational Intelligence held on May 4-9, 1998)

Re claims 1 and 7. A system, for running on a computer, for determining an investment strategy for an entity with assets in taxable and tax-free accounts (i.e., non taxable accounts, see col.10 line 45), comprising: an account information input component, to accept information regarding said assets in said taxable and tax-free accounts for said entity (Jones discloses the AdviceServer which is shown as "the central database repository for holding user profile and portfolio data, see col.5 lines 37-40), an investment selection input component, to accept information regarding a plurality of investments, including an indication of a percentage amount of said assets to invest in each of said plurality of investments (see Jones col.17, lines 17-34); wherein said determined amounts substantially matches said indication of a percentage amount to invest in each of said plurality of investments (i.e., The tax adjustment module 320 takes into account tax implications of the financial products and financial circumstances of the user. For example, the tax adjustment module 320 may provide methods to adjust taxable income and savings, as well as estimates for future tax liabilities associated with early distributions from pension and defined contribution plans, and deferred taxes from investments in qualified plans. Further, the returns for financial products held in taxable investment vehicles (e.g. a standard brokerage account) may be adjusted to take into account expected tax effects for both accumulations and distributions. For example, the component of returns attributable to dividend income should be taxed at the user's income tax rate and the component of returns attributable to capital gains should be taxed at an appropriate capital gains tax rate depending upon the holding period, see col.10, lines 18-53); a time horizon input component, to accept

an indication of a time horizon(Jones discloses this feature in the paragraph ending at the top of col.11, lines 1-6); and a return on investment calculation component, to calculate a return on investment for said entity based on said information regarding said assets, said information regarding a plurality of investments, said indication of a percentage amount, said selected amount to invest from said taxable and said tax-free accounts, and said indication of a time horizon (see col.10 lines 42-53); wherein said account amount selection component determines an amount from said taxable and tax-free accounts in order to produce a maximal after-tax accumulation for said entity at said time horizon (i.e., The portfolio optimization module 340 calculates the utility maximizing set of financial products under a set of constraints defined by the user and the available feasible investment set. In one embodiment, the calculation is based upon a mean-variance optimization of the financial products. The constraints defined by the user may include bounds on asset class and/or specific financial product holdings. In addition, users can specify intermediate goals such as buying a house or putting a child through college, for example, that are incorporated into the optimization, see col.10 lines 54-62). Jones does not explicitly disclose an account amount selection component that selects amounts to invest from said taxable and tax-free accounts randomly or using Genetic Algorithms (GA). However, Kass discloses random selection (see Kass, last paragraph on the first col. Of pg 487). Shoaf on the other hand discloses setting values and evaluating the fitness and selecting the model using GA (see first col. Of pg 357). Thus it would have been obvious to one of ordinary skill in the art to combine the

teachings of Jones, Kass, and Shoaf to produce an efficient set portfolio, which would result in greater performance.

Re claims 2 and 3. Jones discloses the system wherein said account amount selection component selects amounts from said taxable and tax-free accounts are performed plurality of times (i.e., The tax adjustment module 320 takes into account tax implications of the financial products and financial circumstances of the user. For example, the tax adjustment module 320 may provide methods to adjust taxable income and savings, as well as estimates for future tax liabilities associated with early distributions from pension and defined contribution plans, and deferred taxes from investments in qualified plans. Further, the returns for financial products held in taxable investment vehicles (e.g. a standard brokerage account) may be adjusted to take into account expected tax effects for both accumulations and distributions. For example, the component of returns attributable to dividend income should be taxed at the user's income tax rate and the component of returns attributable to capital gains should be taxed at an appropriate capital gains tax rate depending upon the holding period........, see col.10, lines 18-53). Neither Jones nor Shoaf discloses random amount selection and an after-tax accumulation calculation for said entity based on said randomly selected amounts. However, Kass discloses random selection (see Kass, last paragraph on the first col. Of pg 487). Thus it would have been obvious to one of ordinary skill in the art to combine the teachings of Jones and Kass to produce an optimal allocation of investment.

.**Re claim 4.** Jones further discloses the system of claim 1 wherein said account amount selection component selects an amount from said taxable and tax-free accounts (see col.10, lines 18-53) except for using Genetic Algorithms (GA) in order to produce a maximal return on investment for said entity at said time horizon. However, Shoaf discloses GA to produce an efficient set portfolio starting on section 2 on the second col. of pg 354. Thus it would have been obvious to one of ordinary skill in the art to combine the teachings of Jones and Shoaf to produce an efficient set portfolio, which would result in greater performance.

Re claim 5. Jones as shown in claim 4 supra discloses the system wherein said account amount selection component selects an amount from said taxable and tax-free accounts (see col.10, lines 18-53), Jones further discloses the return on investment calculation component calculates an after-tax accumulation for the entity (i.e., The tax adjustment module 320 takes into account tax implications of the financial products and financial circumstances of the user. For example, the tax adjustment module 320 may provide methods to adjust taxable income and savings, as well as estimates for future tax liabilities associated with early distributions from pension and defined contribution plans, and deferred taxes from investments in qualified plans. Further, the returns for financial products held in taxable investment vehicles (e.g. a standard brokerage account) may be adjusted to take into account expected tax effects for both accumulations and distributions. For example, the component of returns attributable to dividend income should be taxed at the user's income tax rate and the component of returns attributable to capital gains should be taxed at an appropriate capital gains tax

rate depending upon the holding period........, see col.10, lines 18-53). Jones does not explicitly disclose the system further including: a chromosome structure, for use with said Genetic Algorithms, wherein said chromosome structure includes a plurality of values, each value being an indication of an amount from said tax-free accounts to invest in a selected one of said plurality of investments. However, Shoaf teaches a chromosome structure, for use with the Genetic Algorithms, wherein the chromosome structure includes a plurality of values (i.e., Each chromosome contains n fields, each representing all investment position (long or short) and an index for allocation for each security. Thus, the product of n and the field size together determines the total length of each chromosome, see section 3 on the second column of page 356). Thus it would have been obvious to one of ordinary skill in the art to combine the teachings of Jones and Shoaf, since Jones already teaches taxable and tax-free accounts, to produce an efficient set portfolio, which would result in greater performance.

Re claim 6. Jones further discloses the system of claim 1 further including: a personal tax component, to accept information regarding personal tax rates for said entity, wherein said a return on investment calculation component calculates a return on investment for said entity based on said information regarding said personal tax rates (i.e., Finally, the tax module 320 facilitates tax efficient investing by determining optimal asset allocation among taxable accounts (e.g., brokerage accounts) and nontaxable accounts (e.g., an Individual Retirement Account (IRA), or employer sponsored 401(k) plan). In this manner the tax module 320 is designed to estimate the tax impact for a particular user with reference to that particular user's income tax rates, capital gains

rates, and available financial products. Ultimately, the tax module 320 produces tax-adjusted returns for each available financial product and tax-adjusted distributions for each available financial product, see col.10 lines 43-53).

Re claim 8. Jones further discloses the method of claim 7 wherein said step of determining an amount to invest from said taxable and tax-free accounts includes calculating tax consequences over said time horizon for said entity based on said amounts to invest (i.e., Finally, the tax module 320 facilitates tax efficient investing by determining optimal asset allocation among taxable accounts (e.g., brokerage accounts) and nontaxable accounts (e.g., an Individual Retirement Account (IRA), or employer sponsored 401(k) plan). In this manner the tax module 320 is designed to estimate the tax impact for a particular user with reference to that particular user's income tax rates, capital gains rates, and available financial products. Ultimately, the tax module 320 produces tax-adjusted returns for each available financial product and tax-adjusted distributions for each available financial product, see col.10 lines 43-53).

Re claim 9. The method of claim 8 wherein said step of determining an amount to invest from said taxable and tax deferred accounts further includes: performing sampling steps a plurality of times (i.e., The tax adjustment module 320 takes into account tax implications of the financial products and financial circumstances of the user. For example, the tax adjustment module 320 may provide methods to adjust taxable income and savings, as well as estimates for future tax liabilities associated with early distributions from pension and defined contribution plans, and deferred taxes from investments in qualified plans. Further, the returns for financial products held in taxable

investment vehicles (e.g. a standard brokerage account) may be adjusted to take into account expected tax effects for both accumulations and distributions. For example, the component of returns attributable to dividend income should be taxed at the user's income tax rate and the component of returns attributable to capital gains should be taxed at an appropriate capital gains tax rate depending upon the holding period…….., see col.10, lines 18-53), determining appropriate amounts from said taxable accounts so that said selected percentage amounts for each of plurality of investments is satisfied (i.e., Portfolio Optimization, this determines the portfolio percentages, see col.17 lines 17-34, also see "plan monitoring section", there is a discussion of how the system can adjust to changes or adjustments, col.18 lines 51-67); and determining a result if said amounts were invested as selected and determined for said time horizon (i.e., The portfolio optimization module 340 calculates the utility maximizing set of financial products under a set of constraints defined by the user and the available feasible investment set. In one embodiment, the calculation is based upon a mean-variance optimization of the financial products. The constraints defined by the user may include bounds on asset class and/or specific financial product holdings. In addition, users can specify intermediate goals such as buying a house or putting a child through college, for example, that are incorporated into the optimization, see col.10 lines 54-62). Jones does not explicitly disclose said sampling steps comprising: randomly selecting amounts from said tax-free accounts to invest in each of said plurality of investments. However, Kass makes this disclosure (see Kass, last paragraph on the first col. of pg 487). Thus it

would have been obvious to one of ordinary skill in the art to combine the teachings of Jones and Kass to produce an optimal allocation of investments.

Re claim 10. Claim 10 recites similar limitations to claim 5 and thus rejected using the same art and rationale as in claim 5 supra.

Re claim 11. Jones further discloses the method of claim 10 further including the step of: calculating an improvement value of said substantially maximal after-tax accumulation based on said determined investment amounts from said taxable and tax-free accounts, as compared to an after-tax accumulation based on said initial settings (i.e., Jones as shown in claims 1 and 7 above selects from taxable and tax free accounts and computes the after tax accumulation. Jones also discloses in the portfolio Optimization module on col.10, lines 54 to col.11 line 6 "utility maximizing set of financial products).

Re claim 12. Jones discloses a computer system for determining an optimal investment strategy for an entity with assets in taxable and tax-free accounts, comprising: means for obtaining tax information, account information, account amounts, and time horizon information from said entity (i.e., AdviceServer which is shown as the central database repository for holding user profile and portfolio data, see col.5 lines 37-40); means for obtaining initial amounts to invest in said taxable and tax-free accounts; means for calculating an after-tax accumulation based on indications (i.e., The tax adjustment module 320 takes into account tax implications of the financial products and financial circumstances of the user. For example, the tax adjustment module 320 may provide methods to adjust taxable income and savings, as well as estimates for future tax

liabilities associated with early distributions from pension and defined contribution plans, and deferred taxes from investments in qualified plans. Further, the returns for financial products held in taxable investment vehicles (e.g. a standard brokerage account) may be adjusted to take into account expected tax effects for both accumulations and distributions. For example, the component of returns attributable to dividend income should be taxed at the user's income tax rate and the component of returns attributable to capital gains should be taxed at an appropriate capital gains tax rate depending upon the holding period......., see col.10, lines 18-53); and means for displaying said resulting after-tax accumulation (see col.10 lines 50-52, also see fig.1 element110, also see fig.2 element 221). Jones does not explicitly disclose a GA structure, means for calculating an after tax accumulation based on indications in said GA, and means for modifying said GA chromosome structure to improve said calculated after-tax accumulation. However, Shoaf discloses GA to produce an efficient set portfolio (see section 2, second col.of pg 354). Shoaf also discloses the chromosome structure to produce an efficient set portfolio (see section 3 on the second col. Of page 356). Shoaf further discloses setting values and evaluating the fitness and selecting the model (see first col. Of pg 357). Thus it would have been obvious to one of ordinary skill in the art to combine the teachings of Jones and Shoaf to produce an efficient set portfolio, which would result in greater performance.

Response to Arguments

Applicant's arguments filed on 01/04/2007 have been fully considered but they are not persuasive. The applicant argues in substance that Jones does not disclose an amount selection component that randomly selects amounts from the taxable and tax-free accounts. Further, Jones does not describe performing the steps of randomly selecting amounts from the taxable and tax-free accounts a plurality of times to produce a maximal return. The applicant further argues that if the secondary reference, Kass could make up the deficiencies of Jones, there is no motivation to combine Jones and Kass. Contrary to the applicant's assertion, the examiner maintains that Jones describes performing the steps of randomly selecting amounts from the taxable and tax-free accounts a plurality of times to produce a maximal return (i.e., The tax adjustment module 320 takes into account tax implications of the financial products and financial circumstances of the user. For example, the tax adjustment module 320 may provide methods to adjust taxable income and savings, as well as estimates for future tax liabilities associated with early distributions from pension and defined contribution plans, and deferred taxes from investments in qualified plans. Further, the returns for financial products held in taxable investment vehicles (e.g. a standard brokerage account) may be adjusted to take into account expected tax effects for both accumulations and distributions. For example, the component of returns attributable to dividend income should be taxed at the user's income tax rate and the component of returns attributable to capital gains should be taxed at an appropriate capital gains tax rate depending upon

the holding period........, see col.10, lines 18-53). Further, Kass cures the deficiency of Jones by teaching an amount selection component that randomly selects amounts (see Kass first col. Of pg 487). Thus since Jones already teaches taxable and tax-free accounts, it would have been obvious to one of ordinary skill in the art to use random amount/number selection method taught by Kass to randomly selects amounts from the taxable and tax-free accounts Kass to produce an optimal allocation of investment. The examiner wants to remind the applicant that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. In re Nomiya, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. In re McLaughlin, 170 USPQ 209 (CCPA 1971). references are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures. In re Bozek, 163 USPQ 545 (CCPA) 1969.

The applicant further argues that Jones does not disclose using Genetic Algorithms (GA) in order to produce a maximal return on investment for the entity at the time horizon. Further, Jones does not disclose a chromosome structure, for use with the Genetic Algorithms, wherein the chromosome structure includes a plurality of values, each value being an indication of an amount from the tax-free accounts to invest in a selected one of the plurality of investments; and the return on investment calculation component calculates an after-tax accumulation for the entity based on the values in the

chromosome structure. The applicant further argues that even if the secondary reference, Shoaf could make up the deficiencies of Jones, there is no motivation to combine Jones and Shoaf. Contrary to the applicant's assertion, the examiner maintains that Jones discloses the return on investment calculation component calculates an after-tax accumulation for the entity (i.e., The tax adjustment module 320 takes into account tax implications of the financial products and financial circumstances of the user. For example, the tax adjustment module 320 may provide methods to adjust taxable income and savings, as well as estimates for future tax liabilities associated with early distributions from pension and defined contribution plans, and deferred taxes from investments in qualified plans. Further, the returns for financial products held in taxable investment vehicles (e.g. a standard brokerage account) may be adjusted to take into account expected tax effects for both accumulations and distributions. For example, the component of returns attributable to dividend income should be taxed at the user's income tax rate and the component of returns attributable to capital gains should be taxed at an appropriate capital gains tax rate depending upon the holding period........, see col.10, lines 18-53). Shoaf cures the deficiencies of Jones by teaching using Genetic Algorithms (GA) in order to produce a maximal return on investment for the entity at the time horizon (i.e., For the GA solution to the efficient set problem, Shoaf and Foster [3] altered the problem slightly to solve for an efficient set portfolio over the entire range of potential expected portfolio returns. Each member of the GA population represents an allocation of resources for the portfolio. The user selects a desirable balance between risk and return using adjustable constant in the GA fitness function

(See section 2. col.2, last para on pg 354); a chromosome structure, for use with the Genetic Algorithms, wherein the chromosome structure includes a plurality of values (i.e., Each chromosome contains n fields, each representing all investment position (long or short) and an index for allocation for each security. Thus, the product of n and the field size together determines the total length of each chromosome, see section 3 on the second column of page 356). Thus it would have been obvious to one of ordinary skill in the art to combine the teachings of Jones and Shoaf, since Jones already teaches taxable and tax-free accounts, to produce an efficient set portfolio, which would result in greater performance. The examiner, again, wants to remind the applicant that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. In re Nomiya, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. In re McLaughlin, 170 USPQ 209 (CCPA 1971). references are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures. In re Bozek, 163 USPQ 545 (CCPA) 1969.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OJO O. OYEBISI whose telephone number is (571) 272-8298. The examiner can normally be reached on 8:30A.M-5:30P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHARD E. CHILCOT can be reached on (571)272-6777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RICHARD E. CHILCOT, JR.
SUPERVISORY PATENT EXAMINER